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10/787,112

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10/02/2007

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EXAMINER

DOAN, TRANG T

ART UNIT

PAPER NUMBER

2131

MAIL DATE

DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/787,112

Applicant(s)

MIMATSU ET AL.

Examiner

Trang Doan

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 September 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-15 and 17-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 and 17-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. This action is in response to the amendment filed on 09/10/2007.
2. Claims 1 and 9-15 have been amended.
3. Claim 16 has been canceled.
4. Claim 21 has been added.
5. Claims 1-15 and 17-21 are pending for consideration.

### ***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. Regarding claim 1, the limitation "the target port of said first storage device", on page 3 of the Claims, is unclear. Examiner interprets the above limitation as "the target port of said second storage device". Appropriate correction is required.

### ***Response to Arguments***

9. Applicant's arguments filed on 09/10/2007 have been fully considered but they are not persuasive.

Applicant argues that Ofek and Dalal, alone or in combination do not teach access control information is set such that access to a first storage system is permitted

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from a target port of a second storage system by one host computer, while preventing such access from another host computer. Examiner respectfully disagrees. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Ofek teaches real-time data migration from an existing storage device to a replacement storage device (Ofek: see figure 5). A host requests data elements to the replacement storage device (e.g., the second storage system). If the data elements have not been migrated, the replacement storage device will connect to the existing storage device to request the data elements requested from the host (Ofek: see figure 3). The process of data migration from the existing storage device to the replacement storage device is transparent to the hosts. Ofek further teaches access restrictions regarding the data migration but not in details (Ofek: column 12 line 59 through column 13 line 4; determines whether the "FROM" volume has any restrictions that preclude the data migration). Dalal further supports access restrictions when a user requests to access a logical volume (Dalal: see figure 9, figure 21 and column 12 lines 47-56). Examiner notes each user recited in Dalal's system has his/her own access requirements to a particular volume, therefore it will not be possible for a different user who has a different access requirements to access the

same particular volume. Therefore, it is proper to combine the teaching of Dalal into the system of Ofek to further enhance securities in data migrating process.

The examiner is not trying to teach the invention but is merely trying to interpret the claim language in its broadest and reasonable meaning. The examiner will not interpret to read narrowly the claim language to read exactly from the specification, but will interpret the claim language in the broadest reasonable interpretation in view of the specification. Therefore, rejections for claims 1-15 and 17-21 are respectfully maintained.

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1-15 and 17-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ofek et al. (US Patent 6598134) (hereinafter Ofek) in view of Dalal et al. (US 7162575) (hereinafter Dalal).

Regarding claim 1, Ofek teaches a first step for obtaining first access restriction information and information at a volume which are set up on each port of a first storage device, through a second network, said first access restriction information including information of access permission from a first host computer and access denial from a second host computer (Ofek: see figure 7 item 308: host requests access to old data

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storage system through new data storage system); a second step for obtaining attribute information including a port type and a status of utilization of each port of a second storage device, from said second storage device through said second network (Ofek: see figure 2 and column 4 lines 38-64: data map/table contains parameters that maps the new data storage system to the old data storage system); a third step for selecting a target port of said second storage device which is utilized for reception of an access request to a volume of said first storage device from said first host computer (Ofek: see figure 1 and column 5 lines 11-19); and a fourth step for setting up, is assigned so that said second host computer may not access said first storage device via said second storage device. (Ofek: see figure 7 and column 12 line 59 through column 13 line 4).

Not specifically described in detail in Ofek is the step of on the target port of said second storage device which is selected in said third step, second access restriction information based on said first access restriction information of a port of said first storage device to which a volume, of which the port is utilized for an access, is assigned so that said first host computer is permitted to access said first storage device via the target port of said first storage device, while said second host computer is not permitted to access said first device via the target port of said second storage device.

However, Dalal, in an analogous art, teaches on the target port of said second storage device which is selected in said third step, second access restriction information based on said first access restriction information of a port of said first storage device to which a volume, of which the port is utilized for an access (Dalal: column 18 lines 30-34 and lines 53-67 and column 19 lines 1-4: template B of a first logical volume inherits all

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the rules that template A of a second logical volume provides). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the procedure in Ofek by including inheritance concept as taught by Dalal, because such modification would improve the ability to access data faster.

Regarding claim 2, Ofek in view of Dalal teaches wherein said third step selects an initiator port which is utilized for transmission of an access request to a volume of said first storage device from said second storage device, and said fourth step sets up, on the target port of said second storage device which is selected in said third step, the second access restriction information of the port of said first storage device to which the volume, of which the port is utilized for an access, is assigned, and permits only an access request to the first access restriction information of said first storage device to which the volume is assigned from the initiator port of said second storage device which is selected in said third step (Ofek: see figures 1& 7 and column 4 lines 38-64 and column 12 line 59 through column 13 line 4).

Regarding claim 3, Ofek in view of Dalal teaches wherein said first step obtains the first access restriction information which is set up on each port of a first storage device and information of a volume, from said first storage device through said second network (Ofek: see figures 1 & 2 and column 8 lines 6-17 and lines 28-53 and column 12 lines 59-67 and column 13 lines 1-22).

Regarding claim 4, Ofek in view of Dalal teaches wherein said first step specifies the first access restriction information which is set up on each port of a first storage device and information of the volume, by obtaining information of a port of one of said

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host computers which is utilized for an access to the volume of said first storage device and information of the port of said first storage device, from said one of said host computers through said second network (Ofek: see figure 1 items 12, 24 and 14: host requests access to old data storage system through new data storage system).

Regarding claim 5, Ofek in view of Dalal teaches a fifth step for changing a port of said first storage device which is associated with each mount point of a file system of said host computer and a volume which is assigned to the port, to a port of said second storage device which is utilized for an access to the volume and a volume which is defined on the port (Ofek: see figure 2).

Regarding claim 6, Ofek in view of Dalal teaches wherein said first storage device sets up first access restriction information on each port, by use of a first management table in which an information identifier of a volume and a source port or an access to be permitted are listed with a LUN unit with respect to each port, and said second storage device sets up second access restriction information on each port, by use of a second management table in which a LUN and an identifier of a volume are listed with a group unit of source ports of an access to be permitted with respect to each port, and said first step obtains said first management table, and said fourth step prepares said second management table as to each port of said second storage device which is selected in said third step, on the basis of a listed content of said first management table which is obtained in said first step as to each port of said first storage device to which a volume, of which said port is utilized for an access, is assigned, and updates said second management table of said second storage device



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(Ofek: see figures 1 & 2 and column 4 lines 38-64: data map/table contains parameters that maps the new data storage system to the old data storage system).

Regarding claim 7, Ofek in view of Dalal teaches wherein in case that one of said host computer has a plurality of paths which are used for an access to the same volume, a process of said fourth step to the volume is carried out at least twice separately to said plurality of paths (Ofek: see figures 1 and 5).

Regarding claim 8, Ofek in view of Dalal teaches wherein said second network is different from said first network (Ofek: see figures 1 and 5).

Regarding claim 9, this claim has limitations that is similar to those of claim 1, thus it is rejected with the same rationale applied against claim 1 above.

Regarding claim 10, this claim has limitations that is similar to those of claim 1, thus it is rejected with the same rationale applied against claim 1 above.

Regarding claim 11, this claim has limitations that is similar to those of claim 1, thus it is rejected with the same rationale applied against claim 1 above.

Regarding claim 12, this claim has limitations that is similar to those of claim 1, thus it is rejected with the same rationale applied against claim 1 above.

Regarding claim 13, this claim has limitations that is similar to those of claim 1, thus it is rejected with the same rationale applied against claim 1 above.

Regarding claim 14, this claim has limitations that is similar to those of claim 1, thus it is rejected with the same rationale applied against claim 1 above.

Regarding claim 15, this claim has limitations that is similar to those of claim 1, thus it is rejected with the same rationale applied against claim 1 above.

Regarding claim 17, Ofek in view of Dalal teaches wherein said calculation unit specifies the first access restriction information which is set up on each port of said first storage device and information of the volume, by obtaining a port of one of said host computers which is utilized for an access to the volume if said first storage device and information of the port of said first storage device, from said one host computer through said second network (Ofek: see figure 1 items 12, 24 and 14 and figure 2: host requests access to old data storage system through new data storage system).

Regarding claim 18, Ofek in view of Dalal teaches wherein said calculation unit changes a port or said first storage device which is associated with each mount point of a file system of said host computer and a volume which is assigned to the port, to a port of said second storage device which is utilized for an access to the volume and a volume which is defined on the port (Ofek: see figures 1 & 2 and column 4 lines 38-64 and column 5 lines 45-55 and column 6 lines 14-46).

Regarding claim 19, Ofek in view of Dalal teaches wherein said first storage device sets up the first access restriction information on each port, by use of a first management table on which an information identifier of a volume and a source port of an access to be permitted are listed with a LUN unit with respect to each port, and said second storage device sets up the second access restriction information on each port, by use of a second management table on which a LUN and an identifier of a volume are listed with a group unit of source ports of an access to be permitted with respect to each port, and said calculation unit obtains said first management table, and prepares said second management table as to each port of said second storage device which is

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selected as above, on the basis of a listed content of said first management table and updates said second management table of said second storage device (Ofek: see figures 1 & 2 and column 4 lines 38-64 and column 5 lines 45-55 and column 6 lines 14-46 and column 12 line 59 through column 13 line 4).

Regarding claim 20, Ofek in view of Dalal teaches wherein in case that said host computers have a plurality of paths which are used for an access to the same volume, a process of setting up said access restriction information to a volume is carried out at least twice separately to said plurality of paths (Ofek: see figures 1 & 2 and column 4 lines 38-64 and column 5 lines 45-55 and column 6 lines 14-46 and column 12 line 59 through column 13 line 4).

Regarding claim 21, Ofek in view of Dalal teaches the access control information sets up for each path as to whether the access is permitted or not permitted (Ofek: Ofek: column 12 line 59 through column 13 line 4; determines whether the "FROM" volume has any restrictions that preclude the data migration).

### ***Conclusion***

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Trang Doan whose telephone number is (571) 272-0740. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on (571) 272-3795. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Trang Doan  
Examiner  
Art Unit 2131

T.D.

CHRISTOPHER REVAK  
PRIMARY EXAMINER

